

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number
WO 2005/094159 A2

(51) International Patent Classification: Not classified

(21) International Application Number:
PCT/TB2004/004453

(22) International Filing Date:
12 November 2004 (12.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/519,550 12 November 2003 (12.11.2003) US

(71) Applicant (for all designated States except US): ON-
COMAB GMBH [DE/DE]; Friedrich-Bergius-Ring 15,
97076 Würzburg (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): VOLLMERS,
Heinz, Peter [DE/DE]; Budapest Strasse 23, 97084
Würzburg (DE). MÜLLER-HERMELINK, Hans,
Konrad [DE/DE]; Heinrich-Zeuner-Strasse 72, 97082
Würzburg (DE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METHODS OF IDENTIFYING NEOPLASM-SPECIFIC ANTIBODIES AND USES THEREOF

(57) Abstract: The present invention features methods of identifying, from healthy donors, polypeptides, such as antibodies, that are specific for neoplasm, polypeptides identified using such methods, and their use in the treatment and diagnosis of neoplasms.



WO 2005/094159 A2

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number
WO 2005/094159 A3

(51) International Patent Classification:
C07K 16/30 (2006.01) G01N 33/574 (2006.01)
A61K 39/395 (2006.01)

(21) International Application Number:
PCT/IB2004/004453

(22) International Filing Date:
12 November 2004 (12.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/519,550 12 November 2003 (12.11.2003) US

(71) Applicant (for all designated States except US): ON-
COMAB GMBH [DE/DE]; Friedrich-Bergius-Ring 15,
97076 Würzburg (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): VOLLMERS,
Helnz, Peter [DE/DE]; Budapest Strasse 23, 97084
Würzburg (DE). MÜLLER-HERMELINK, Hans,
Konrad [DE/DE]; Heinrich-Zeuner-Strasse 72, 97082
Würzburg (DE).

(74) Agent: WEISS, W.; Weickmann & Weickmann, Postfach
860 820, 81635 München (DE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
5 April 2007

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METHODS OF IDENTIFYING NEOPLASM-SPECIFIC ANTIBODIES AND USES THEREOF

(57) Abstract: The present invention features methods of identifying, from healthy donors, polypeptides, such as antibodies, that are specific for neoplasm, in particular carcinoma, polypeptides identified using such methods, and their use in the treatment and diagnosis of neoplasms.



WO 2005/094159 A3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/004453

A. CLASSIFICATION OF SUBJECT MATTER
C07K16/30 A61K39/395 G01N33/574

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G01N A61K C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, EMBASE, Sequence Search, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JANSSON B ET AL: "The human repertoire of antibody specificities against Thomsen-Friedenreich and Tn-carcinoma-associated antigens as defined by human monoclonal antibodies." CANCER IMMUNOLOGY, IMMUNOTHERAPY : CII. 1992, vol. 34, no. 5, 1992, pages 294-298, XP001208215 ISSN: 0340-7004 abstract ✓	1-4, 7-12,15, 16
X	US 5 610 280 A (BRANDT ET AL) 11 March 1997 (1997-03-11) abstract ✓ ----- -/-	1-16

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

11 January 2006

Date of mailing of the international search report

06. 02. 2006

Name and mailing address of the ISA,
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Knudsen, H

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/004453

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 97/02479 A (YALE UNIVERSITY; GAREN, ALAN; CAI, XIAOHONG) 23 January 1997 (1997-01-23) ✓ sequences 34,35	21,23, 27, 29-33, 35-37, 42-45, 51,55, 57-84
Y	WO 02/082085 A (ZLB BIOPLASMA AG; MIESCHER, SYLVIA) 17 October 2002 (2002-10-17) ✓ sequence 14	21,23, 27, 29-33, 35-37, 42-45, 51,55, 57-84
A	WO 03/076472 A (ONCOMAB GMBH; VOLLMERS, HEINZ, PETER; MUELLER-HERMELINK, HANS, KONRAD) 18 September 2003 (2003-09-18). abstract ✓	1-88
A	GROSSMAN H B: "Natural antibody to a human bladder carcinoma cell line." CANCER IMMUNOLOGY, IMMUNOTHERAPY : CII. 1982, vol. 13, no. 2, 1982, pages 89-92, ✓ XP009059441 ISSN: 0340-7004 page 91, right-hand column, paragraph 2	1-16
A	WO 99/65935 A (KAROLINSKA INNOVATIONS AB; CHIODI, FRANCESCA) 23 December 1999 (1999-12-23) ✓ page 1, paragraph 2	1-16
A	VOLLMERS H P ET AL: "Monoclonal antibodies NORM-1 and NORM-2 induce more normal behavior of tumor cells in vitro and reduce tumor growth in vivo." CELL. MAR 1985, vol. 40, no. 3, March 1985 (1985-03), ✓ pages 547-557, XP009059438 ISSN: 0092-8674 abstract	18-88
A	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 08, ✓ 29 August 1997 (1997-08-29) & JP 09 098786 A (MORINAGA & CO LTD; RES DEV CORP OF JAPAN), 15 April 1997 (1997-04-15) abstract ----- -/--	17-88

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB2004/004453

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	<p>BRÄNDLEIN S ET AL: "Natural IgM antibodies and immunosurveillance mechanisms against epithelial cancer cells in humans"</p> <p>CANCER RESEARCH, AMERICAN ASSOCIATION FOR CANCER RESEARCH, BALTIMORE, MD, US, vol. 63, 15 November 2003 (2003-11-15), pages 7995-8005, XP002346831</p> <p>ISSN: 0008-5472</p> <p>the whole document</p> <p>-----</p>	1-16

INTERNATIONAL SEARCH REPORT

International application No.
PCT/182004/004453**Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 75-82 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/004453

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5610280	A	11-03-1997	NONE	
WO 9702479	A	23-01-1997	US 6140470 A	31-10-2000
WO 02082085	A	17-10-2002	NONE	
WO 03076472	A	18-09-2003	AU 2003214537 A1 CA 2478116 A1 DE 10210427 A1 EP 1485415 A2 US 2005208056 A1	22-09-2003 18-09-2003 09-10-2003 15-12-2004 22-09-2005
WO 9965935	A	23-12-1999	AU 4772299 A EP 1087993 A1 US 6846637 B1	05-01-2000 04-04-2001 25-01-2005
JP 09098786	A	15-04-1997	NONE	

Copy for the designated Office (DO/EP)
PATENT COOPERATION TREATY

PCT/IB2004/004453

31

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE

(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

WEISS, W.
Weickmann & Weickmann
Postfach 860 820
81635 München
Germany

Date of mailing (day/month/year) 28 October 2005 (28.10.2005)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference 36374P WO/WWbjay	
International application No. PCT/IB2004/004453	International filing date (day/month/year) 12 November 2004 (12.11.2004)

1. The following indications appeared on record concerning:

☐ the applicant ☐ the inventor ☐ the agent ☐ the common representative

Name and Address

EPO-DG 1
10.11.2005
TEAM 14

State of Nationality

State of Residence

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address

WEISS, W.
Weickmann & Weickmann
Postfach 860 820
81635 München
Germany

State of Nationality

State of Residence

Telephone No.

089/45563 0

Facsimile No.

089/45563 999

Teleprinter No.

3. Further observations, if necessary:

Please note that an agent has been appointed, as indicated in Box 2, and the change in the file's reference.

4. A copy of this notification has been sent to:

☒ the receiving Office ☒ the designated Offices concerned
☒ the International Searching Authority ☐ the elected Offices concerned
☐ the International Preliminary Examining Authority ☐ other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 338.70.60	Authorized officer Cécile CHATEL (Fax : 4122 338 70 60) Telephone No. (41-22) 338 8316
--	--